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ABSTRACT

Results of the second year of the New Jersey Minimum Basic Skills Tests in reading and mathematics, mandated by the New Jersey Public School Education Act of 1975, are summarized. Approximately 397,000 students in grades three, six, nine, and eleven were tested. Results of the tests showed that a smaller percentage of sixth-grade students met statewide standards than any other tested grade, confirming previous state and national findings of decreased performance in the intermediate grades. Other findings showed relationships between student achievement and socioeconomic status, type of community in which the school district is located, and region of the state. Tables summarizing results are included, along with appendices outlining required minimum competencies for each grade, and the procedures used to determine cutting scores. (MH)

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Occasional Papers in Education

NEW JERSEY STATE DEPARTMENT OF EDUCATION

DIVISION OF OPERATIONS, RESEARCH, AND EVALUATION

NEW JERSEY STATEWIDE MINIMUM STANDARDS: RESULTS FROM THE PROGRAM'S SECOND YEAR

BY:

Stephen L. Koffler

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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NEW JERSEY STATEWIDE MINIMUM STANDARDS: RESULTS FROM THE PROGRAM'S SECOND YEAR

Stephen L. Koffler

DIVISION OF OPERATIONS, RESEARCH, AND EVALUATION
NEW JERSEY STATE DEPARTMENT OF EDUCATION
225 WEST STATE STREET, TRENTON, NEW JERSEY 08625

August, 1978

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OFFICE OF THE COMMISSIONER

Dear Colleague:

The establishment of statewide minimum proficiency standards is a key addition to the "Thorough and Efficient" Education Act of 1975. It provides a mechanism whereby students who are in need of basic skills remediation can be properly identified and placed in supplemental programs. It also provides districts with the opportunity to note strengths and weaknesses in the educational process with relation to minimum basic skills in reading and mathematics.

This is the second year of implementation of the New Jersey Minimum Basic Skills testing program. It is the first year that a completely new Minimum Basic Skills Test has been used. This report outlines the results of the administration of those tests.

I am certain that you will find this paper informative and useful.

Cordially,

Fred G. Burke
Commissioner

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EXECUTIVE SUMMARY

The 1977-78 New Jersey Minimum Basic Skills reading and mathematics tests were administered to approximately 397,000 students in grades three, six, nine, and eleven in April, 1978. These new tests were designed to meet the legal mandate of Chapter 97 of the New Jersey Public Laws of 1976 which established uniform statewide minimum proficiency standards in communication and computation skills.

The tests were developed with broad public input. The Minimum Standards Advisory Committee made a concentrated effort to insure that the new tests complied with the provisions of the Public School Education Act of 1975 and that the tests were educationally and psychometrically valid and reliable.

Students who correctly answered at least 75% of the reading items or at least 65% of the mathematics items met the uniform statewide proficiency standard in that subject. Statewide, 86.3% of the third grade students met or exceeded the proficiency requirement in reading, while 75.3% of the third grade students did so in mathematics. In sixth grade, 75.3% of the students met or exceeded the reading standard, while 70.4% did likewise in mathematics. In ninth grade, 76.3% of the students met or exceeded the reading standard and 74.5% met or exceeded the mathematics standard. In eleventh grade, 89.9% of the students met or exceeded the reading standard, while 84.0% did so in mathematics.

There was a wide disparity between the results of students in urban areas and in other types of communities. A considerably smaller percent of students in urban districts met the minimum proficiency requirement than did students in other types of communities. These test results emphasize the necessity for continuing to make urban education a high priority.

With regard to individual district results, there were districts in which 100% of its students met or exceeded the minimum proficiency level, but there were also districts in which less than 50% of the students met or exceeded the statewide standard.

Test development has begun for the 1978-79 Minimum Basic Skills Tests. Those tests are being prepared utilizing the same objectives as those on this year's tests. However, while the objectives remain the same, all test items will change for the 1978-79 tests.

A study is now being undertaken to equate the results of the 1978-79 MBS Tests to those of the 1977-78 MBS Tests. As a result of this equating study, and the uniformity of test objectives over both years' tests, valid comparisons can be made next year to assess longitudinal MBS achievement.

INTRODUCTION

During April, 1978, approximately 397,000 students in grades three, six, nine, and eleven in New Jersey's public schools were administered the New Jersey Minimum Basic Skills Tests in reading and mathematics.

These tests were designed, with broad public involvement, to meet the legal mandate of Chapter 97 of the New Jersey Public Laws of 1976 which established uniform statewide minimum proficiency standards in basic communication and computation skills. The law provided that these minimum standards be established "at appropriate points in the educational careers of the pupils," and that these standards be "reasonably related to those levels of proficiency ultimately necessary as part of the preparation of individuals to function politically, economically, and socially in a democratic society."

The minimum standards legislation was signed into law on September 22, 1976. Because the bill was signed at too late a date to properly implement a comprehensive program for school year 1976-77, a special interim program was developed for that school year.

1976-77 Program

For the 1976-77 school year, the New Jersey State Board of Education plan included the following provisions:

- That the Educational Assessment Program's Statewide Reading and Mathematics Basic Skills Tests (EAP), which were administered in October, 1976 to all students in grades 4, 7, and 10, be used as the

indicator of minimum basic skills proficiency.[1]

- That students who did not achieve at least a 65% mastery level (i.e., at least 65% of the test items correct) on a particular test did not satisfy the minimum proficiency requirement in that subject.

- For all students below the 65% mastery level, a basic skills improvement plan must have been developed and submitted with the annual report due July 1, 1977 (see Chapter 212 of the New Jersey Public Laws of 1975, 18A: 7A-7 as amended). The improvement plan must have specified the programs and/or procedures which each district was implementing or would implement to alleviate basic skills deficiencies.

- For all students who were below the 65% mastery level and who were also in the lowest scoring 20% of all tested students in the state (i.e., the student's total test score was one of the lowest 20% of test scores in the state), appropriate remedial assistance must have been provided during spring, 1977. Assistance could have been provided by participation in federally funded programs, state compensatory education programs, and/or locally designated compensatory education programs. For those students who were not receiving assistance through these programs, an individually developed instructional plan must have been implemented by the classroom teacher and/or by appropriate resource, remedial, or compensatory education teachers. Each superintendent must have filed a statement of assurances with the County Superintendent of Schools by March 1, 1977 stating that all students in this category were receiving appropriate remedial services.

The results of the program for the 1976-77 school year are presented in a paper titled "New Jersey Statewide Minimum Standards: Results from the Program's First Year."

1977-78 Program

Beginning with the present academic year, 1977-78, a new, more comprehensive program was adopted for implementation by the State Board of Education.

[1]Students who are 1) non-English dominant, or 2) classified as special education and not receiving instruction in the regular classroom were not required to take the test.

The State Board directed that a new minimum basic skills test in reading and mathematics be developed. These tests would replace the Educational Assessment Program Tests, and, similar to the Educational Assessment Program Tests, would be objective referenced instruments, with the addition of a single composite score. The mastery level would be set for each test and grade level. The tests would be administered to all appropriate students in grades 3, 6, 9, and 11 in the spring of the school year.

The State Board appointed an independent task force, the Minimum Basic Skills Advisory Committee, to oversee all aspects of the development of the new program. Headed by Frederick G. Meissner, Vice President of New Jersey Bell and chairperson of the Task Force on Compensatory Indicators and Standards, the committee operated under the following principles and guidelines:

- That the program developed would comply with the Thorough and Efficient planning process contained in Chapter 212 of the New Jersey Public Laws of 1975.
- That it would seek information and advice from as wide a cross section of interested educators and the general public as practicable in developing its program and test instruments.
- That it would develop a program and test instruments which would in fact measure student minimum basic skills attainment--and that these instruments would be developed <u>without</u> being influenced by current state and local district programs and/or capability to remediate student populations falling below minimum cut off scores.
- That it would make every effort to eliminate social, ethnic, and cultural bias.

- That it would develop tests that could be anchored to the former N.J.E.A.P. testing programs so that some continuing record of student attainment might be maintained.

In addition to the Advisory Committee, eight other committees were appointed to assist in the implementation of the minimum standards and basic skills provisions in the law. The groups formed included:

- Elementary Math Committee
- Elementary Reading Committee
- Secondary Math Committee
- Secondary Reading Committee
- Communications and Life Skills Committee
- Minority Advisory Committee
- Bilingual Committee
- Technical Advisory Committee

The four subject matter committees were responsible for recommendation of basic skills objectives in each area. The Communications and Life Skills Committee was responsible for investigating basic life skills other than reading and mathematics. The Minority Advisory Committee's charge was to examine the work conducted by each of the other committees in an effort to eliminate bias in test objectives or test items. The bilingual committee was responsible for reviewing activities of other committees as those activities related to students of limited English speaking ability. Finally, the charge of the Technical Advisory Committee was to review the results of the field tests, the psychometric properties of the tests, and the data presentation methods to assure that the tests met all technical standards.

Just after formation of the Minimum Basic Skills

Committees in January, 1977, concern was expressed publicly about the overweighting of committee membership by New Jersey public school educators. This imbalance was adjusted in February, 1977.

Since February, 1977, Minimum Basic Skills committee membership totaled 108. This total consisted of 62 educators from public schools (57%), 21 from higher education (19%), 5 school board members (5%), 6 students (6%), and 14 business people (13%). This represents 57% public school educators and 43% other.

The Technical Advisory Committee, formed in May, 1977, added another 13 to the 108 total. All members were educators (Meissner, 1977).

Test Development

All items contained in the 1977-78 Minimum Basic Skills Tests measure objectives in reading and mathematics considered to be minimum skills in those subjects. The determination of those minimum objectives was a lengthy process, involving input from broad segments of the population.

Initially, the four subject matter committees identified a list of objectives for each test. Following this, surveys were developed and disseminated to all teachers in grades 3 and 6 and to all high school teachers, as well as administrators and curriculum coordinators. Additionally, surveys were sent to all Board of Education members, a

sample of high school seniors, and a sample of the general public. These surveys were designed to elicit input from these groups as to their ideas and opinions of what objectives should be considered as minimum skills. In total, 33,802 surveys were returned and used by the subject matter committees to determine the final list of objectives upon which each test would be based.[2] The final objective list for each test appears in Appendix A.

Upon development of these final objective lists, items were written by Educational Testing Service item writers.[3] These items underwent extensive review by all of the committees.

The proposed Minimum Basic Skills Tests were field tested during the period of October 3-14, 1977 in a representative cross section of school districts in New Jersey.

Listed below are distribution details on that field test:

SUBJECT	GRADE LEVEL	NUMBER OF STUDENTS	NUMBER OF DISTRICTS
Reading	3	450	23
Math	3	510	23
Reading	6	590	25
Math	6	580	25
Reading	9	620	27
Math	9	590	26
Reading	11	475	22
Math	11	535	25
TOTALS		4,350	196

[2]For a detailed account of the survey procedure, see "Minimum Basic Skills Survey Results," by Mary Ann Wilmer.

[3]Educational Testing Service was the contractor for the tests.

Based on the results of the field test, further review and editing of the items ensued. Additionally, the field test results were used to assist in the development of the proficiency standard for each test.

Determination of the Proficiency Standards

The determination of the cut-off scores recommended for use as the proficiency standards for each of the tests was based upon a wide range of analytic procedures. The subject matter committees analyzed the individual test items and the Technical Advisory Committee examined the results of the field test administration, and both sets of committees independently recommended cut-off scores to the Advisory Committee. The members of the Advisory Committee studied the various recommendations and concluded that the most appropriate cut-off scores would be 65% proficiency in mathematics and 75% in reading.[4]

A description of the procedures employed in arriving at the above cut-off scores is included in Appendix B.

The tests were administered on April 12-13, 1978.

RESULTS

The statewide results of the administration of the Minimum Basic Skills Tests appear in Table 1.

An examination of Table 1 indicates that in

[4]Any student failing to correctly answer at least 65% of the mathematics items and 75% of the reading items would not meet the minimum proficiency requirement in that subject.

TABLE 1

1977-78 MINIMUM BASIC SKILLS TEST RESULTS

TEST	NUMBER TAKING TEST	NUMBER MEETING OR EXCEEDING STATEWIDE STANDARD	PERCENT MEETING OR EXCEEDING STATEWIDE STANDARD	PERCENT MEETING STATEWIDE STANDARD ON FIELD TEST
3 READING	90229	77854	86.3%	81.8%
3 MATH	90183	67921	75.3	77.1
6 READING	95848	72139	75.3	76.9
6 MATH	95736	67395	70.4	66.6
9 READING	109446	83463	76.3	71.5
9 MATH	108531	80850	74.5	74.1
11 READING	98214	88300	89.9	90.7
11 MATH	97631	81994	84.0	81.1

reading, performance ranged from 89.9% of the eleventh grade students meeting or exceeding the standard to 75.3% of the sixth grade students doing similarly. In mathematics, performance ranged from 84.0% of the eleventh grade students meeting the proficiency standard to 70.4% of the sixth grade students doing likewise.

There exists an apparent trend in the results of the 1977-78 Minimum Basic Skills Tests. In both the reading and mathematics tests, a smaller percentage of students met the statewide standard in sixth grade than in any of the other tested grades. Further, although a larger percentage of students met the minimum standard in ninth grade than in sixth grade, the percentage was smaller than in the third or eleventh grades.

This result confirms previous findings in New Jersey and throughout the nation that there is a definite decrease in performance during the middle years of the students' education. A larger percentage of students in the middle grades lack minimum proficiencies than in the early grades or high school grades.

Table I also presents the results of the field test administration of the tests. The field tests were administered during fall, 1977 to a representative sample of students in grades 4, 7, 10 and 12.[5] Students in these grades were selected because they most closely resembled the

[5]A stratified sampling plan was employed, stratifying districts according to District Factor Group and region of the state.

intended population of test takers.

DFG, Community Type, and EIC Results

For purposes of clarity and analysis of the results of the Minimum Basic Skills Tests, each student's test score was categorized into one of seven score groupings, based on the percent of items correctly answered.

For each of the reading tests, the following categorization was developed:

CATEGORY	PERCENT OF ITEMS CORRECTLY ANSWERED
7	95-100%
6	85-94
5	75-84
4	60-74
3	40-59
2	20-39
1	0-19

Similarly, for the mathematics test, the following categories were developed:

CATEGORY	PERCENT OF ITEMS CORRECTLY ANSWERED
7	95-100%
6	80-94
5	65-79
4	50-64
3	35-49
2	20-34
1	0-19

In any of the tests, any student whose test score placed him/her in category 1, 2, 3, or 4 did not meet the minimum proficiency requirement (Appendix C contains a copy of the Minimum Basic Skills Roster).

Tables 2-9 detail the results of the Minimum Basic Skills Tests for each test according to District Factor

TABLE 2

PERCENTAGES OF STUDENTS IN THE SEVEN MINIMUM
STANDARDS CATEGORIES BY DISTRICT FACTOR GROUPINGS

THIRD GRADE
READING

DFG	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-39% MASTERY	CATEGORY 3 40-59% MASTERY	CATEGORY 4 60-74% MASTERY	CATEGORY 5 75-84% MASTERY	CATEGORY 6 85-94% MASTERY	CATEGORY 7 95-100% MASTERY
A	19832	0.17%	3.34%	14.90%	17.72%	19.45%	31.86%	12.55%
B	7195	0.01	0.65	5.43	9.83	16.09	40.82	27.16
C	6895	0.03	0.65	4.18	8.80	15.61	41.48	29.25
D	8359	0.00	0.13	2.31	5.83	11.88	42.27	37.59
E	6554	0.00	0.14	1.69	4.70	10.74	42.14	40.59
F	4857	0.00	0.10	1.56	4.65	9.80	41.75	42.12
G	9848	0.00	0.10	1.32	3.93	9.06	41.04	44.55
H	10621	0.00	0.06	1.40	3.52	8.94	38.76	47.32
I	6816	0.00	0.09	0.79	2.95	6.72	39.69	49.77
J	7541	0.00	0.04	0.68	2.35	6.34	38.40	52.19
Z	1708	0.00	0.06	2.28	6.21	11.07	41.10	39.29
TOTAL	90229	0.04%	0.89%	4.92%	7.86%	12.45%	38.68%	35.16%

TABLE 3

PERCENTAGES OF STUDENTS IN THE SEVEN MINIMUM
STANDARDS CATEGORIES BY DISTRICT FACTOR GORUPINGS

THIRD GRADE
MATHEMATICS

DFG	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-34% MASTERY	CATEGORY 3 35-49% MASTERY	CATEGORY 4 50-64% MASTERY	CATEGORY 5 65-79% MASTERY	CATEGORY 6 80-94% MASTERY	CATEGORY 7 95-100% MASTERY
A	19823	0.63%	7.67%	19.30%	24.45%	24.97%	20.11%	2.87%
B	7186	0.07	2.59	9.63	18.22	28.11	34.65	6.74
C	6895	0.09	2.09	7.32	15.68	27.37	38.54	8.92
D	8361	0.02	0.81	5.37	13.30	27.25	43.62	9.63
E	6546	0.02	0.98	3.99	12.31	24.99	44.73	12.99
F	4853	0.00	0.70	4.31	9.79	24.13	47.37	13.70
G	9849	0.04	0.61	3.71	10.02	21.74	48.23	15.66
H	10612	0.01	0.60	3.13	8.86	21.56	48.58	17.26
I	6814	0.00	0.53	2.70	7.43	20.19	48.78	20.37
J	7534	0.01	0.31	1.58	7.59	18.97	51.05	20.49
Z	1707	0.12	1.00	4.98	13.77	24.43	45.34	10.37
TOTAL	90183	0.16%	2.46%	7.79%	14.27%	23.94%	39.76%	11.61%

TABLE 4

PERCENTAGES OF STUDENTS IN THE SEVEN MINIMUM
STANDARDS CATEGORIES BY DISTRICT FACTOR GROUPINGS

SIXTH GRADE
READING

DFG	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-39% MASTERY	CATEGORY 3 40-59% MASTERY	CATEGORY 4 60-74% MASTERY	CATEGORY 5 75-84% MASTERY	CATEGORY 6 85-94% MASTERY	CATEGORY 7 95-100% MASTERY
A	20270	0.13%	3.95%	18.73%	28.47%	22.96%	22.88%	2.89%
B	7488	0.04	0.96	8.92	21.42	24.16	37.54	6.96
C	7228	0.03	1.09	6.86	18.15	23.26	41.96	8.65
D	8701	0.00	0.43	4.77	15.55	23.54	45.05	10.67
E	7196	0.01	0.22	3.89	14.62	23.24	47.30	10.71
F	5190	0.00	0.15	2.68	12.49	22.08	49.87	12.74
G	10320	0.02	0.24	3.04	12.36	20.42	50.09	13.83
H	11667	0.01	0.13	2.43	11.15	19.97	51.22	15.09
I	7429	0.00	0.08	1.68	9.15	18.24	52.35	18.50
J	8667	0.00	0.07	1.77	7.22	16.73	54.76	19.45
Z	1691	0.00	0.12	3.78	14.73	22.18	47.31	11.87
TOTAL	95848	0.04%	1.11%	7.03%	16.56%	21.52%	42.75%	11.00%

TABLE 5

PERCENTAGES OF STUDENTS IN THE SEVEN MINIMUM STANDARDS CATEGORIES BY DISTRICT FACTOR GROUPINGS

SIXTH GRADE
MATHEMATICS

DFG	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-34% MASTERY	CATEGORY 3 35-49% MASTERY	CATEGORY 4 50-64% MASTERY	CATEGORY 5 65-79% MASTERY	CATEGORY 6 80-94% MASTERY	CATEGORY 7 95-100% MASTERY
A	20195	0.19%	6.41%	22.05%	31.72%	25.94%	12.93%	0.77%
B	7489	0.05	1.87	10.44	24.21	33.62	27.15	2.66
C	7222	0.07	1.95	8.38	19.58	33.76	33.26	3.00
D	8695	0.02	0.97	6.43	18.68	33.66	35.72	4.52
E	7198	0.00	0.82	5.24	16.09	33.55	39.43	4.88
F	5186	0.06	0.56	4.45	15.43	34.07	40.40	5.03
G	10309	0.00	0.73	4.45	13.45	31.76	41.96	7.65
H	11657	0.02	0.54	3.95	13.51	30.63	43.58	7.76
I	7433	0.00	0.28	2.76	10.60	28.56	47.64	10.16
J	8660	0.00	0.27	2.17	8.20	25.01	52.26	12.09
Z	1691	0.00	0.59	4.20	16.74	32.64	41.87	3.96
TOTAL	95736	0.06%	2.03%	8.76%	18.76%	30.28%	34.75%	5.37%

TABLE 6

PERCENTAGES OF STUDENTS IN THE SEVEN MINIMUM
STANDARDS CATEGORIES BY DISTRICT FACTOR GROUPINGS

NINTH GRADE
READING

DFG	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-39% MASTERY	CATEGORY 3 40-59% MASTERY	CATEGORY 4 60-74% MASTERY	CATEGORY 5 75-84% MASTERY	CATEGORY 6 85-94% MASTERY	CATEGORY 7 95-100% MASTERY
A	18759	0.23%	6.92%	19.37%	25.25%	21.38%	21.13%	5.71%
B	8722	0.14	2.91	10.06	18.87	21.58	33.24	13.21
C	7973	0.09	2.19	8.50	16.41	22.15	36.16	14.50
D	9817	0.03	1.07	5.54	13.27	20.54	41.07	18.48
E	8945	0.10	0.68	3.96	12.30	20.78	41.76	20.42
F	8213	0.02	0.95	3.74	10.65	18.47	42.98	23.18
G	12217	0.02	0.97	3.63	10.13	18.14	42.25	24.85
H	10508	0.02	0.72	3.18	9.35	17.11	42.60	27.02
I	11854	0.02	0.39	2.10	6.66	14.54	43.88	32.40
J	7415	0.03	0.59	2.20	6.20	13.15	43.37	34.46
V	4004	0.02	1.62	10.66	22.48	25.32	32.42	7.47
Z	1006	0.00	2.09	5.96	13.82	17.79	40.66	19.68
TOTAL	109446	0.08%	2.14%	7.38%	14.14%	19.15%	37.29%	19.82%

TABLE 7

PERCENTAGES OF STUDENTS IN THE SEVEN MINIMUM
STANDARDS CATEGORIES BY DISTRICT FACTOR GROUPINGS

NINTH GRADE
MATHEMATICS

DFG	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-34% MASTERY	CATEGORY 3 35-49% MASTERY	CATEGORY 4 50-64% MASTERY	CATEGORY 5 65-79% MASTERY	CATEGORY 6 80-94% MASTERY	CATEGORY 7 95-100% MASTERY
A	18567	0.19%	4.36%	20.14%	30.97%	26.16%	16.13%	2.05%
B	8699	0.02	1.92	10.31	21.82	29.34	31.46	5.13
C	7932	0.06	1.46	7.27	19.87	31.69	33.57	6.06
D	9786	0.03	0.75	4.67	15.66	32.24	39.40	7.26
E	8949	0.02	0.49	3.58	14.46	30.52	41.86	9.07
F	8202	0.00	0.52	3.57	12.01	28.30	44.45	11.14
G	12189	0.08	0.77	3.23	11.54	26.55	44.61	13.22
H	10503	0.04	0.49	3.08	11.38	25.50	44.83	14.69
I	11833	0.00	0.33	1.84	7.95	22.89	49.13	17.85
J	6853	0.00	0.50	2.74	8.39	20.79	47.93	19.64
V	4002	0.07	1.25	8.25	23.99	34.08	29.06	3.30
Z	1004	0.00	0.80	5.58	15.04	26.29	41.24	11.06
TOTAL	108531	0.06%	1.40%	7.16%	16.79%	27.43%	37.34%	9.81%

TABLE 8

PERCENTAGES OF STUDENTS IN THE SEVEN MINIMUM
STANDARDS CATEGORIES BY DISTRICT FACTOR GROUPINGS

ELEVENTH GRADE
READING

DFG	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-39% MASTERY	CATEGORY 3 40-59% MASTERY	CATEGORY 4 60-74% MASTERY	CATEGORY 5 75-84% MASTERY	CATEGORY 6 85-94% MASTERY	CATEGORY 7 95-100% MASTERY
A	13429	0.07%	1.08%	7.04%	18.45%	23.64%	35.57%	14.14%
B	7049	0.03	0.71	2.87	10.04	18.10	42.39	25.86
C	7200	0.04	0.43	2.24	8.69	18.26	43.79	26.54
D	9143	0.03	0.37	1.56	6.51	14.30	43.72	33.51
E	8480	0.02	0.25	1.33	5.67	14.66	44.50	33.56
F	7360	0.00	0.18	0.92	4.62	12.21	43.37	38.70
G	11764	0.05	0.26	1.27	4.90	11.67	42.81	39.04
H	10435	0.02	0.31	1.11	4.48	11.66	41.38	41.04
I	11658	0.04	0.20	0.83	2.88	8.32	39.10	48.63
J	7609	0.01	0.26	0.54	2.63	7.82	38.17	50.57
V	3217	0.03	0.09	3.54	13.21	25.77	43.80	13.55
Z	833	0.00	1.92	1.92	7.20	14.05	43.46	31.45
TOTAL	98214	0.03%	0.43%	2.21%	7.43%	14.58%	41.22%	34.11%

TABLE 9

PERCENTAGES OF STUDENTS IN THE SEVEN MINIMUM
STANDARDS CATEGORIES BY DISTRICT FACTOR GROUPINGS

ELEVENTH GRADE
MATHEMATICS

DFG	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-34% MASTERY	CATEGORY 3 35-49% MASTERY	CATEGORY 4 50-64% MASTERY	CATEGORY 5 65-79% MASTERY	CATEGORY 6 80-94% MASTERY	CATEGORY 7 95-100% MASTERY
A	13304	0.02%	1.47%	9.92%	25.23%	30.61%	27.10%	5.64
B	6939	0.06	0.58	4.67	14.87	27.87	40.47	11.49
C	7187	0.04	0.39	3.35	13.82	28.33	41.73	12.34
D	9101	0.04	0.38	2.26	10.94	25.29	45.13	15.94
E	8429	0.01	0.40	2.04	10.52	26.27	44.62	16.13
F	7332	0.00	0.37	1.47	9.34	23.09	45.23	20.50
G	11731	0.09	0.55	1.97	9.48	21.81	46.02	20.08
H	10394	0.01	0.49	1.89	8.48	21.49	45.04	22.61
I	11592	0.00	0.20	1.39	6.01	17.59	47.10	27.71
J	7551	0.07	0.17	1.24	6.04	16.63	46.56	29.28
V	3206	0.00	0.66	4.87	19.00	32.72	36.96	5.80
Z	828	0.00	0.85	3.50	14.98	24.88	40.34	15.46
TOTAL	97631	0.03%	0.55%	3.32%	12.12%	24.18%	42.19%	17.62%

Groups (DFG), the socioeconomic status measure developed for every school district in the state. There are ten DFGs, labelled A to J; DFG A contains districts with the lowest relative socioeconomic status, and DFG J contains districts with the highest relative socioeconomic status. Additionally, there are two other DFG categories; DFG V contains all Vocational-Technical LEAs; DFG Z contains all LEAs for which no census information was available, and hence no socioeconomic determination possible. Table 10 summarizes the results of Tables 2-9.

The results according to DFG are to be expected from the literature (Coleman, et al., 1966). Student achievement has been found to be related to socioeconomic status, (however, there is no causality implied). This variable becomes critical when comparisons are to be made. For example, comparing an inner-city school district serving children from economically deprived families with the affluent surrounding suburbs could be grossly misleading. Despite net test scores, the inner-city school district might be making a more substantial contribution to student performance than its affluent neighboring school districts, (Bruno, et al.).

The smallest percent of students meeting the minimum proficiency standard were in DFG 'A', while the greatest percent

TABLE 10

PERCENT OF STUDENTS MEETING OR EXCEEDING
THE PROFICIENCY STANDARD
BY DFG

STATE	GRADE 3		GRADE 6		GRADE 9		GRADE 11	
DFG	READING	MATH	READING	MATH	READING	MATH	READING	MATH
A	63.9%	47.9%	48.7%	39.6%	48.2%	44.3%	73.4%	63.4%
B	84.1	69.5	68.7	63.4	68.0	65.9	86.4	79.8
C	86.3	74.8	73.9	70.0	72.8	71.3	88.6	82.4
D	91.7	80.5	79.3	73.9	80.1	78.9	91.5	86.4
E	93.5	82.7	81.3	77.9	83.0	81.5	92.7	87.0
F	93.7	85.2	84.7	79.5	84.6	83.9	94.3	88.8
G	94.6	85.6	84.3	81.4	85.2	84.4	93.5	87.9
H	95.0	87.4	86.3	82.0	86.7	85.0	94.1	89.1
I	96.2	89.3	89.1	86.4	90.8	89.9	96.0	92.4
J	96.9	90.5	90.9	89.4	91.0	88.3	96.6	92.5
V	*	*	*	*	65.2	66.4	83.1	75.5
Z	91.5	80.1	81.4	78.5	78.1	78.6	89.0	80.7
TOTAL	86.3%	75.3%	75.3%	70.4%	76.3%	74.5%	89.9%	84.0%

*No Third or Sixth Vocational LEAs

of students meeting the standard were in DFG 'J'. It is important to note that the largest discrepency between percent of students meeting the standard lay between students in DFG 'A' and all other DFGs. Because most of the major urban cities are categorized into DFG 'A', these results emphasize the disparity in achievement levels of students in the major city school districts and all other school districts.

To further analyze the results of the 1977-78 Minimum Basic Skills Tests, the students' scores were grouped according to the type of community in which their school district was located. Tables 11-14 present this information.[6] The greatest percentage of students who met the minimum standard was in the suburban and regional school districts; the smallest percent of students meeting the standard was in the urban school districts. The performance of students in rural districts lay between those in urban and suburban districts. These results further emphasize the disparity between the test scores of students in urban districts and those of students in other types of communities. More importantly, these results re-emphasize the necessity for making urban education a high priority.

The final analysis of the Minimum Basic Skills Test results concerns a regional grouping of students. The twenty-one counties of New Jersey have been grouped into

[6]Table 20 summarizes this information.

TABLE 11

PERCENTAGES OF STUDENTS IN EACH OF THE SEVEN
MINIMUM STANDARDS CATEGORIES BY COMMUNITY TYPE

THIRD GRADE
READING

COMMUNITY TYPE	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-39% MASTERY	CATEGORY 3 40-59% MASTERY	CATEGORY 4 60-74% MASTERY	CATEGORY 5 75-84% MASTERY	CATEGORY 6 85-94% MASTERY	CATEGORY 7 95-100% MASTERY
REGIONAL	3423	0.00%	0.03%	1.20%	3.51%	9.09%	38.85%	47.33%
URBAN	41733	0.08	1.77	8.57	11.79	15.41	36.70	25.67
SUBURBAN	33962	0.00	0.07	1.34	3.72	9.06	40.70	45.12
RURAL	10963	0.00	0.38	3.29	7.13	12.65	39.82	36.71

MATHEMATICS

COMMUNITY TYPE	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-34% MASTERY	CATEGORY 3 35-49% MASTERY	CATEGORY 4 50-64% MASTERY	CATEGORY 5 65-79% MASTERY	CATEGORY 6 80-94% MASTERY	CATEGORY 7 95-100% MASTERY
REGIONAL	3422	0.03%	0.38%	3.10%	10.43%	22.91%	47.08%	16.07%
URBAN	41708	0.33	4.39	12.25	18.08	24.54	32.34	8.06
SUBURBAN	33952	0.02	0.60	3.28	9.81	22.49	47.82	15.98
RURAL	10953	0.02	1.52	6.30	14.71	26.38	40.77	10.31

TABLE 12

PERCENTAGES OF STUDENTS IN EACH OF THE SEVEN
MINIMUM STANDARDS CATEGORIES BY COMMUNITY TYPE

SIXTH GRADE
READING

COMMUNITY TYPE	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-39% MASTERY	CATEGORY 3 40-59% MASTERY	CATEGORY 4 60-74% MASTERY	CATEGORY 5 75-84% MASTERY	CATEGORY 6 85-94% MASTERY	CATEGORY 7 95-100% MASTERY
REGIONAL	3483	0.03%	0.23%	2.12%	10.42%	18.81%	51.39%	17.00%
URBAN	44717	0.07	2.09	11.14	21.26	22.36	35.41	7.68
SUBURBAN	36717	0.01	0.20	2.98	11.40	20.31	50.40	14.70
RURAL	10810	0.01	0.46	5.35	16.65	22.98	44.38	10.18

MATHEMATICS

COMMUNITY TYPE	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-34% MASTERY	CATEGORY 3 35-49% MASTERY	CATEGORY 4 50-64% MASTERY	CATEGORY 5 65-79% MASTERY	CATEGORY 6 80-94% MASTERY	CATEGORY 7 95-100% MASTERY
REGIONAL	3476	0.00%	0.78%	4.43%	13.32%	30.58%	43.56%	7.34%
URBAN	44623	0.10	3.56	13.45	23.56	29.44	26.49	3.41
SUBURBAN	36702	0.02	0.56	3.87	13.10	30.39	43.98	8.08
RURAL	10814	0.04	1.09	7.43	19.95	33.25	34.62	3.62

TABLE 13

PERCENTAGES OF STUDENTS IN EACH OF THE SEVEN
MINIMUM STANDARDS CATEGORIES BY COMMUNITY TYPE

NINTH GRADE
READING

COMMUNITY TYPE	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-39% MASTERY	CATEGORY 3 40-59% MASTERY	CATEGORY 4 60-74% MASTERY	CATEGORY 5 75-84% MASTERY	CATEGORY 6 85-94% MASTERY	CATEGORY 7 95-100% MASTERY
REGIONAL	22940	0.02%	0.78%	3.27%	9.47%	17.55%	43.07%	25.83%
URBAN	48288	0.14	3.68	11.41	18.38	20.54	31.80	14.07
SUBURBAN	29301	0.03	0.83	3.54	9.46	17.13	42.39	26.63
RURAL	4900	0.12	1.65	7.04	15.49	20.04	37.82	17.84

MATHEMATICS

COMMUNITY TYPE	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-34% MASTERY	CATEGORY 3 35-49% MASTERY	CATEGORY 4 50-64% MASTERY	CATEGORY 5 65-79% MASTERY	CATEGORY 6 80-94% MASTERY	CATEGORY 7 95-100% MASTERY
REGIONAL	22912	0.00%	0.54%	2.94%	11.15%	26.63%	45.78%	12.97%
URBAN	48027	0.11	2.37	11.46	21.97	28.04	29.55	6.49
SUBURBAN	28682	0.02	0.62	3.38	11.68	25.87	44.66	13.77
RURAL	4896	0.00	0.88	6.64	17.61	29.98	36.81	8.09

TABLE 14

PERCENTAGES OF STUDENTS IN EACH OF THE SEVEN
MINIMUM STANDARDS CATEGORIES BY COMMUNITY TYPE

ELEVENTH GRADE
READING

COMMUNITY TYPE	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-39% MASTERY	CATEGORY 3 40-59% MASTERY	CATEGORY 4 60-74% MASTERY	CATEGORY 5 75-84% MASTERY	CATEGORY 6 85-94% MASTERY	CATEGORY 7 95-100% MASTERY
REGIONAL	21359	0.01%	0.33%	1.04%	4.31%	11.21%	41.77%	41.32%
URBAN	41249	0.04	0.64	3.66	10.55	17.12	40.09	27.89
SUBURBAN	28131	0.04	0.23	0.95	4.46	11.62	41.62	41.07
RURAL	4221	0.00	0.28	1.18	8.13	18.03	44.85	27.53

MATHEMATICS

COMMUNITY TYPE	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-34% MASTERY	CATEGORY 3 35-49% MASTERY	CATEGORY 4 50-64% MASTERY	CATEGORY 5 65-79% MASTERY	CATEGORY 6 80-94% MASTERY	CATEGORY 7 95-100% MASTERY
REGIONAL	21277	0.01%	0.33%	1.72%	8.39%	21.02%	46.19%	22.34%
URBAN	40937	0.05	0.84	5.25	15.94	26.04	38.33	13.55
SUBURBAN	27966	0.03	0.30	1.63	8.46	22.10	45.52	21.96
RURAL	4208	0.00	0.38	2.66	12.93	29.25	41.30	13.47

four regions each served by an Educational Improvement Center (EIC), an intermediate unit of the Department of Education. The results of the tests according to EIC region are presented in Tables 15-18.[6] Table 19 summarizes the results of Tables 15-18 as well as those of Tables 11-14.

Invalid Comparisons

When considering the results of the first administration of the Minimum Basic Skills Test, it is tantalizing to attempt to compare these results with the results of the 1976 administration of the Educational Assessment Program Statewide Tests. This type of comparison is erroneous and misleading and should be avoided. There are many reasons for not comparing the results of the two tests.

1. The Minimum Basic Skills Tests were administered to students in grades 3, 6, 9, and 11 in the spring; the Educational Assessment Program Tests were administered to students in grades 4, 7, and 10 in the fall.

2. The tests do not measure the same objectives (i.e., they are not parallel tests). The 1976 Educational Assessment Program Tests measured those objectives being taught in a majority of classrooms throughout the state as determined from a comprehensive survey of teachers, curriculum specialists, and administrators. The Minimum Basic Skills Tests measure those skills considered to be minimum basic skills (based on a survey) that should be mastered by students. A comparison of the two tests indicates that different objectives are being measured on each test; therefore any comparison of results is misleading.

[6]EIC-South encompasses all LEAs in Atlantic, Camden, Cape May, Cumberland, Gloucester, and Salem counties; EIC-Central contains LEAs in Burlington, Mercer, Middlesex, Monmouth, and Ocean counties; EIC-Northeast includes LEAs in Bergen, Essex, Hudson, and Union counties; EIC-Northwest includes LEAs from Hunterdon, Morris, Passaic, Somerset, Sussex, and Warren counties.

TABLE 15

PERCENTAGES OF STUDENTS IN EACH OF THE SEVEN
MINIMUM STANDARDS CATEGORIES BY EIC REGION

THIRD GRADE
READING

REGION	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-39% MASTERY	CATEGORY 3 40-59% MASTERY	CATEGORY 4 60-74% MASTERY	CATEGORY 5 75-84% MASTERY	CATEGORY 6 85-94% MASTERY	CATEGORY 7 95-100% MASTERY
NORTHEAST	30377	0.09%	1.50%	6.93%	10.04%	13.70%	36.84%	30.90%
NORTHWEST	18174	0.00	0.40	2.82	5.96	10.94	38.93	40.95
SOUTH	14609	0.03	0.97	5.70	8.71	13.38	39.02	32.19
CENTRAL	26921	0.02	0.51	3.66	6.24	11.52	40.36	37.70

MATHEMATICS

REGION	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-34% MASTERY	CATEGORY 3 35-49% MASTERY	CATEGORY 4 50-64% MASTERY	CATEGORY 5 65-79% MASTERY	CATEGORY 6 80-94% MASTERY	CATEGORY 7 95-100% MASTERY
NORTHEAST	30356	0.31%	3.77%	10.02%	15.66%	23.15%	36.16%	10.93%
NORTHWEST	18165	0.03	1.09	5.06	12.07	23.80	44.11	13.84
SOUTH	14604	0.19	2.80	9.53	16.63	25.71	36.31	8.83
CENTRAL	26910	0.07	1.73	6.19	12.88	23.93	42.77	12.43

TABLE 16

PERCENTAGES OF STUDENTS IN EACH OF THE SEVEN
MINIMUM STANDARDS CATEGORIES BY EIC REGION

SIXTH GRADE
READING

REGION	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-39% MASTERY	CATEGORY 3 40-59% MASTERY	CATEGORY 4 60-74% MASTERY	CATEGORY 5 75-84% MASTERY	CATEGORY 6 85-94% MASTERY	CATEGORY 7 95-100% MASTERY
NORTHEAST	33031	0.06%	1.63%	9.08%	18.19%	21.10%	39.59%	10.35%
NORTHWEST	19122	0.01	0.54	4.39	13.47	20.37	47.77	13.46
SOUTH	15289	0.08	1.30	8.61	18.86	22.91	39.69	8.56
CENTRAL	28285	0.01	0.80	5.56	15.52	22.02	44.71	11.39

MATHEMATICS

REGION	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-34% MASTERY	CATEGORY 3 35-49% MASTERY	CATEGORY 4 50-64% MASTERY	CATEGORY 5 65-79% MASTERY	CATEGORY 6 80-94% MASTERY	CATEGORY 7 95-100% MASTERY
NORTHEAST	32984	0.09%	2.83%	10.96%	20.08%	28.35%	32.27%	5.42%
NORTHWEST	19105	0.02	0.99	5.60	15.19	31.00	40.70	6.50
SOUTH	15246	0.07	2.41	10.85	22.79	31.50	29.48	2.91
CENTRAL	28280	0.03	1.59	7.22	17.46	31.38	36.44	5.88

TABLE 17

PERCENTAGES OF STUDENTS IN EACH OF THE SEVEN
MINIMUM STANDARDS CATEGORIES BY EIC REGION

NINTH GRADE
READING

REGION	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-39% MASTERY	CATEGORY 3 40-59% MASTERY	CATEGORY 4 60-74% MASTERY	CATEGORY 5 75-84% MASTERY	CATEGORY 6 85-94% MASTERY	CATEGORY 7 95-100% MASTERY
NORTHEAST	37782	0.10%	2.89%	9.42%	15.63%	19.04%	34.49%	18.43%
NORTHWEST	21463	0.06	1.57	5.58	12.00	18.04	39.83	22.91
SOUTH	17450	0.10	2.18	7.62	15.54	20.46	37.06	17.04
CENTRAL	32738	0.06	1.63	6.06	13.09	19.31	38.98	20.88

MATHEMATICS

REGION	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-34% MASTERY	CATEGORY 3 35-49% MASTERY	CATEGORY 4 50-64% MASTERY	CATEGORY 5 65-79% MASTERY	CATEGORY 6 80-94% MASTERY	CATEGORY 7 95-100% MASTERY
NORTHEAST	37093	0.06%	2.01%	9.45%	19.03%	26.82%	33.25%	9.38%
NORTHWEST	21412	0.07	0.92	4.68	13.75	26.77	42.48	11.34
SOUTH	17360	0.04	1.22	7.63	18.25	28.59	36.68	7.59
CENTRAL	32654	0.06	1.16	6.03	15.64	28.10	38.77	10.24

TABLE 18

PERCENTAGES OF STUDENTS IN EACH OF THE SEVEN
MINIMUM STANDARDS CATEGORIES BY EIC REGION

ELEVENTH GRADE
READING

REGION	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-39% MASTERY	CATEGORY 3 40-59% MASTERY	CATEGORY 4 60-74% MASTERY	CATEGORY 5 75-84% MASTERY	CATEGORY 6 85-94% MASTERY	CATEGORY 7 95-100% MASTERY
NORTHEAST	33686	0.05%	0.53%	2.85%	8.69%	15.15%	39.55%	33.17%
NORTHWEST	19975	0.04	0.34	1.67	6.22	12.94	41.07	37.73
SOUTH	15321	0.03	0.33	1.95	7.71	16.12	43.24	30.62
CENTRAL	29195	0.02	0.41	1.97	6.66	14.24	42.19	34.52

MATHEMATICS

REGION	NUMBER TESTED	CATEGORY 1 0-19% MASTERY	CATEGORY 2 20-34% MASTERY	CATEGORY 3 35-49% MASTERY	CATEGORY 4 50-64% MASTERY	CATEGORY 5 65-79% MASTERY	CATEGORY 6 80-94% MASTERY	CATEGORY 7 95-100% MASTERY
NORTHEAST	33379	0.03%	0.58%	4.22%	13.46%	23.67%	40.23	17.80%
NORTHWEST	19891	0.05	0.50	2.40	10.21	22.69	44.32	19.83
SOUTH	15260	0.02	0.50	3.30	13.07	26.21	41.95	14.95
CENTRAL	29064	0.03	0.57	2.91	11.39	24.70	43.10	17.28

TABLE 19

PERCENT OF STUDENTS MEETING OR EXCEEDING
THE PROFICIENCY STANDARD
BY COMMUNITY TYPE AND REGION

STATE	GRADE 3		GRADE 6		GRADE 9		GRADE 11	
COMMUNITY TYPE	READING	MATH	READING	MATH	READING	MATH	READING	MATH
REGIONAL	95.3%	86.1%	87.2%	81.5%	86.5%	85.4%	94.3%	89.5%
URBAN	77.8	64.9	65.4	59.3	66.4	64.1	85.1	77.9
SUBURBAN	94.9	86.3	85.4	82.5	86.1	84.3	94.3	89.6
RURAL	89.2	77.5	77.5	71.5	75.7	74.9	90.4	84.0

STATE	GRADE 3		GRADE 6		GRADE 9		GRADE 11	
REGION	READING	MATH	READING	MATH	READING	MATH	READING	MATH
NORTHEAST	81.4%	70.2%	71.0%	66.0%	72.0%	69.4%	87.9%	81.7%
NORTHWEST	90.8	81.8	81.6	78.2	80.8	80.6	91.7	86.8
SOUTH	84.6	70.8	71.2	63.9	74.6	72.9	90.0	83.1
CENTRAL	89.6	79.1	78.1	73.7	79.2	77.1	90.9	85.1

District Results

The final results that will be considered concern the percent of students who met or exceeded the minimum proficiency standard for each district. Table 20 and 21 list pertinent summary data concerning the school districts' performance on the Minimum Basic Skills Tests. Table 20 lists the smallest percent of students in a district who met or exceeded the standard and the largest percent of students in a district who met the statewide standard. Table 21 presents the percent of districts in which at least 60%, 70%, 80%, 90%, and 100% of the students in the district met or exceeded the minimum proficiency standard.

It is of interest to note that in five of the eight tests, there were districts in which 100% of the students met or exceeded the minimum standard. In fact, in third grade reading, 10.1% of all of the districts had 100% of its students meeting the proficiency standard. Yet, it must also be pointed out that there exist districts in which a majority of students did not meet the minimum standard and in which a great deal of further intensive emphasis on the basic skills is necessary.

Test development has begun for the 1978-79 Minimum Basic Skills Tests. Those tests are being prepared utilizing the same objectives as those on this year's tests. While the objectives remain the same, all test items will

TABLE 20

SUMMARY OF SCHOOL DISTRICT RESULTS
ON THE 1977-78 MINIMUM BASIC SKILLS TESTS

TEST	SMALLEST PERCENT OF STUDENTS MEETING STANDARD	LARGEST PERCENT OF STUDENTS MEETING STANDARD
3 READING	41.4%	100.0%
3 MATH	20.0	100.0
6 READING	33.1	100.0
6 MATH	15.9	100.0
9 READING	27.6	97.8
9 MATH	18.8	98.5
11 READING	55.9	100.0
11 MATH	42.9	98.6

TABLE 21

PERCENT OF DISTRICTS WITH 60, 70, 80, 90, AND 100%
OF STUDENTS MEETING THE MINIMUM STANDARD
ON THE 1977-78 MINIMUM BASIC SKILLS TESTS

TEST	PERCENT OF STUDENTS MEETING STANDARD				
	60%	70%	80%	90%	100%
3 READING	98.3%	95.5%	90.1%	72.5%	10.1%
3 MATH	92.6	83.5	64.0	31.8	4.1
6 READING	92.1	83.1	64.9	27.1	2.3
6 MATH	87.4	74.6	52.1	22.7	3.1
9 READING	92.9	82.3	65.0	22.9	0.0
9 MATH	91.7	80.0	59.6	21.5	0.0
11 READING	99.6	96.3	91.8	75.7	1.5
11 MATH	95.9	90.3	81.3	43.1	0.0

change for the 1978-79 tests.

A study is being undertaken to equate the results of the 1978-79 MBS Tests to those of the 1977-78 MBS Tests. Based on this equating study, and because the two tests will be parallel to each other, valid comparisons can be made next year to assess longitudinal MBS achievement.

APPENDIX A

READING SPECIFICATIONS

New Jersey 3rd Grade Minimum Basic Skills

I. WORD RECOGNITION

A. Sight Vocabulary

Recognize printed basic sight vocabulary presented orally

B. Phonics

1. Vowels - long and short, digraphs and dipthongs
2. Single consonants - initial and final
3. Consonant clusters (blends and digraphs)
4. Rhyming words (including controlled vowel sounds r, l, w)
5. Blending sounds to make words

C. Structural Analysis

1. Inflectional endings (verb suffixes, [ing, ed] and plurals [s, es])
2. Contractions

D. Contextual Analysis

(Using phonic clues, structural analysis, synonyms, antonyms, and compound words)

II. COMPREHENSION

A. Literal

1. Identify facts directly stated in the paragraph - who, what when, where, how, why
2. Identify subject matter of the paragraph - people, food, transportation, camping
3. Identify order and sequence of events (first and last) limit number of events to three
4. Sentence meaning (pictures are item options)
5. Paragraph meaning - main idea as stated
6. Following directions - number of steps limited to two

B. Interpretive

1. Interpret characters' emotions (sad, happy, hungry)
2. Distinguish between fact and fiction
3. Make inferences about causes (Why did -- feel sad?)

III. STUDY SKILLS

A. Alphabetical sequence (first letter)

B. Table of Contents

READING SPECIFICATIONS

New Jersey 6th Grade Minimum Basic Skills

I. WORD RECOGNITION

A. Phonetic Analysis - blending sounds

B. Structural Analysis

1. Syllabication - VCCV, VCV, C+le
2. Affixes and roots
3. Contractions

C. Contextual Analysis (using the following)

1. Possessives
2. Plurals - ies (with changes in roots)
3. Synonyms
4. Antonyms
5. Multiple meanings of a single word

II. COMPREHENSION

A. Literal

1. Identify facts directly stated in the paragraph, including supporting statements specifically related to the main ideas (where, who, how, when, what, why)
2. Identify main idea as directly stated in a paragraph (not an entire passage)
3. Sequence of events or ideas - both chronological and cause and effect (e.g., As a result of ---, the ...)
4. Following directions

B. Interpretive

1. Identify main idea of an entire passage
2. Drawing inferences, including character interpretation and prediction of outcomes
3. Summary of information
4. Distinguishing fact from fiction

III. STUDY SKILLS

A. Alphabetical sequence to second and third letters

B. Table of contents

C. Glossary

D. Index

E. Dictionary skills - guide words

F. Dictionary skills - selection of appropriate meaning

G. Obtaining facts from illustrative materials - maps, graphs, tables

READING SPECIFICATIONS

New Jersey 9th Grade Minimum Basic Skills

I. WORD RECOGNITION

A. Structural Analysis

1. Identify word roots in different positions
2. Identify correct syllabication of words
3. Possessives and contractions

B. Word Meaning

1. Identify meaning of words with multiple meanings using context clues
2. Identify synonyms of words in context
3. Identify antonyms of words in context
4. Identify the appropriate homonym in context
5. Identify meanings of word forms in context (roots, contractions, possessives, tenses, etc.)

II. READING COMPREHENSION

A. Literal Comprehension

1. Identify main idea when stated
2. Identify factual information when stated
3. Identify "signal words" in context (but, however, etc.)
4. Following directions

B. Interpretive

1. Identify main idea or topic when implied
2. Make inferences (including order and sequence, cause and effect comparison and contrast, prediction of outcome, and understanding of characters' behaviors, emotions, motives)
3. Determine meaning of figurative language
4. Distinguish among fact, opinion, and fiction

C. Evaluative

1. Identify author's purpose
2. Determine validity of author's reasoning
3. Relate ideas or information in passage to situations not discussed
4. Distinguish between relevant and irrelevant information

III. STUDY SKILLS

A. Locational Skills

1. Identify appropriate reference source (Encyclopedia, dictionary, card catalogue, other references)
2. Use of guide words
3. Use of dictionary for selecting correct word meaning and spelling
4. Use parts of a book (table of contents, index, etc.)

B. Understanding Illustrative Materials

1. Use of road map
2. Use of chart
3. Use of cartoon, picture, diagram

IV. TYPE OF READING MATERIAL

A. Citizenship material (driver's license, laws, voter forms, government forms, etc.)

B. Continued learning material (textbooks, reference materials, newspapers, magazines, etc.)

C. Employee/Employer materials (applications, want ads, checks, job related reading, etc.)

D. Health and Safety material (first aid, medicine, labels, nutrition, signs, etc.)

E. Consumer Information (labels, ads, guarantees, leases, repair guides, etc.)

READING SPECIFICATIONS

New Jersey 11th Grade Minimum Basic Skills

I. WORD RECOGNITION

A. Word Meaning

1. Identify meaning of words with multiple meanings using context clues
2. Identify synonyms of words in context
3. Identify antonyms of words in context
4. Identify meanings of word forms in context (tenses, possessives, plurals, etc.)

II. READING COMPRHENSION

A. Literal Comprehension

1. Identify main idea when stated
2. Identify factual information when stated
3. Identify "signal words" in context (but, however, etc.)
4. Following directions

B. Interpretive

1. Identify main idea or topic when implied
2. Make inferences (including order and sequence, cause and effect, comparison and contrast, prediction of outcome, and understanding of characters' behaviors, emotions, motives)
3. Determine meaning of figurative language
4. Distinguish among fact, fiction, and opinion

C. Evaluative

1. Identify author's purposes
2. Determine validity of author's reasoning
3. Relate ideas or information given in passage to situations not discussed
4. Distinguish between relevant and irrelevant information

III. STUDY SKILLS

A. Identify appropriate reference sources*

B. Use appropriate reference materials* (*Encyclopedia, dictionary, card catalogue, parts of books, other reference sources, informative footnotes)

C. Use road maps, charts, illustrations

IV. TYPE OF READING MATERIAL

A. Citizenship materials (driver's license, laws, voter forms, government forms, etc.)

B. Continued learning material (textbooks, reference materials, newspapers, magazines, etc.)

C. Employee/Employer material (applications, want ads, checks, job related reading, etc.)

D. Health and Safety material (first aid, medicine, labels, nutrition, signs, etc.)

E. Consumer Information (labels, ads, guarantees, leases, repair guides, etc.)

MATHEMATICS SPECIFICATIONS

New Jersey 3rd Grade Minimum Basic Skills

I. COMPUTATION

A. Whole Numbers

1. Add two one-digit numbers
2. Add numbers with two or three-digits without regrouping (carrying) in vertical format
3. Add numbers with two or three-digits with one regrouping (carrying) in vertical format
4. Add three numbers without regrouping (carrying) in vertical format
5. Subtract one-digit numbers in vertical format
6. Subtract two or three-digit numbers without regroupi..g (borrowing) in vertical format
7. Subtract two or three-digit numbers with one regrouping (borrowing)
8. Add two or three digit numbers with more than one regrouping (carrying)
9. Subtract three-digit numbers with more than one regrouping (borrowing)
10. Multiply two one-digit numbers less than or equal to six
11. Multiply a two-digit number by a one-digit number without carrying (digits less than or equal to six)
12. Divide with divisors and quotients less than or equal to six - no remainder

II. NUMBER CONCEPTS

A. Count to one thousand; read or write numerals up to one thousand (base 10 only)

B. Recognize place value in three-digit numerals

C. Recognize models for simple fractions ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$), such as,

for $\frac{1}{4}$

D. Solve simple equations involving addition

E. Solve simple equations involving subtraction

F. Solve simple equations involving multiplication

G. Solve simple inequalities

H. Give the cardinal number of a set (tell how many) or the ordinal number associated with a position (e.g., first, third, last)

I. Recognize odd and even numbers less than twenty (zero omitted)

J. Relate inverse operations: addition to subtraction and multiplication to division

K. Solve equations involving concept of identity (property of zero and one)

L. Count by 2's, 5's, or 10's; identify a missing term in a simple number pattern or sequence

III. MEASUREMENT AND GEOMETRY

A. Select the proper unit of measure for length from a set of unit measures: inch, foot, yard

B. Identify metric units: meter, liter, gram

C. Determine the time of day by the half-hour when given a picture of a clock

D. Tell how many minutes in an hour

E. Tell how many days in a week

F. Tell how many months in a year

G. Identify a day and date on a calendar

H. Determine the value of cents of a set of coins (picture of)

I. Recognize basic geometric figures: triangle, rectangle, square, circle

J. Locate points on a number line for whole numbers

V. PROBLEM SOLVING AND APPLICATION

A. Translate mathematical sentences to words (simple one-step)

B. Determine whether a set of coins is sufficient to purchase an item at a given cost

C. Make change in simple store purchase problems involving sales less than 50 cents

D. Solve problems related to the passage of time

E. Solve problems involving distance (pictorial)

F. Solve simple reading problems related to computation objectives

MATHEMATICS SPECIFICATIONS

New Jersey 6th Grade Minimum Basic Skills

I. COMPUTATION

A. Whole Numbers

1. Addition of two four-digit or five-digit numbers with regrouping (in vertical format)
2. Column addition of more than two three-digit numbers
3. Addition in horizontal format of addends with an uneven number of digits
4. Subtraction of a four or five-digit number from a five-digit number without regrouping (borrowing)
5. Subtraction of a four or five-digit number from a five-digit number containing zero in the minuend with regrouping (borrowing)
6. Subtraction involving a four or five-digit number with regrouping (borrowing)
7. Mixed addition and subtraction in horizontal format - student may recopy and align, (e.g., 1351 + 570 - 73)
8. Multiplication of a two-digit multiplier (two or three-digit multiplicand); utilization of zero
9. Multiplication with three-digit multiplier and three-digit multiplicand
10. Division: one and two-digit divisors without remainders
11. Division: one and two-digit divisors with remainders

B. Fractions

1. Addition of like fractions (same denominators) in vertical and horizontal format with and without regrouping
2. Addition of mixed numbers without regrouping (carrying) in vertical format
3. Subtraction of like fractions without regrouping (carrying) in horizontal format
4. Multiplication of a whole number by a proper fraction in horizontal format
5. Multiplication of a proper fraction by a proper fraction in horizontal format

C. Decimals

1. Addition of decimals in vertical format
2. Addition of decimals in horizontal format with equal and unequal numbers of digits
3. Subtraction of decimals in vertical format
4. Subtraction of decimals in horizontal format
5. Multiplication of a whole number and a decimal
6. Multiplication of decimals
7. Division of decimals: divisor without decimal

II. NUMBER CONCEPTS

A. Numeration

1. Given five digits, write largest number using each digit once
2. Place value: Up to five digit numerals (e.g., 2,398, 5,437, 3,421, 2,763 Which shows a number with 3 in the thousands place?)
3. Place value: expand notation up to five digits (e.g., 23,567 = 2 ten thousands + 3 thousands + 5 hundreds + 6 tens + 7 ones)
4. Numeration system: whole numbers only, base 10 - reading and writing numerals 0 - 1,000,000
5. Numeration system, decimals: reading and writing numerals from 0.001 to 1 one place at a time
6. Concept of percent: equivalence with decimals and fractions using 100 as base
7. Rounding off numbers

B. Fractions Concepts

1. Models for fractions (shaded regions, etc.)
2. Recognize fractions greater than one (e.g., 4/3)
3. Recognize or name equivalent fractions
4. Equivalence of $a \div b$ and a/b (e.g., $33 \div 7$ and $33/7$)
5. Renaming: $\frac{33}{7} = 4\frac{5}{7}$ OR $2\frac{1}{3} = \frac{7}{3}$

C. Number Sentences

1. Solving equations in one of the following formats: $24 - n = 6$; $n - 6 = 18$; $n \div 12 = 4$ or $48 \div n = 4$; $4 \times n = 28$ (eliminate proportions)
2. Inequalities: numbers that make inequalities true (e.g., identify a number that makes $10 + \square > 20$)

D. Properties

1. Number line - locating points on a number line for fractions and decimals
2. Recognition of: factor or multiple or divisor
3. Application of commutative and associative principles for addition and multiplication (no terminology)
4. Recognition of inverse operation: addition to subtraction; multiplication to division
5. Informal concept of identity: zero and one (e.g., $8 + \square = 8$ or $8 \times \square = 8$)
6. Number patterns (e.g., 1, 2, 4, 8, 16, $\square$) What is the next number?

III. MEASUREMENT AND PLANE FIGURES

A. Measuring length of object to nearest whole unit

B. Determine most appropriate measure to be used to measure length (e.g., distance between towns)

C. Recognize an appropriate unit of measure for weight or given a particular object, select the most appropriate unit of weight measure (metric or traditional)

D. Recognizing the appropriate unit of measure for capacity

E. Temperature measure: reading a thermometer

F. Converting within the same measuring system (metric or traditional)

G. Perimeter of triangles and rectangles

H. Identify or name geometric figures: circle, triangle, square, and rectangle

IV. PROBLEM SOLVING AND APPLICATIONS

A. Problems with reading adapted and relevant to appropriate grade level (single operation and multi-operation)

B. Ratio and proportion: including practical applications, (e.g., if three pencils cost 15 cents, how many can be bought for 45 cents?)

C. Practical estimation (no reference to rounding)

D. Average: Given five or fewer numbers, what is the average?

E. Given the price of various items, determine the change after purchase of selected items

F. Interpret simple scale drawings and maps

G. Read data from simple graphs and charts

H. Interprete data from simple graphs and charts

I. Computation involving expressed amounts of money

MATHEMATICS SPECIFICATIONS

New Jersey 9th Grade Minimum Basic Skills

I. COMPUTATION

A. Addition of Whole Numbers

1. Addition of whole numbers, multiple places, horizontal format without carrying
2. Addition of whole numbers, multiple places, vertical format without carrying
3. Addition of whole numbers, multiple places, horizontal format with carrying
4. Addition of whole numbers, multiple places, vertical format with carrying

B. Subtraction of Whole Numbers

1. Subtraction of whole numbers, multiple places, horizontal format without borrowing
2. Subtraction of whole numbers, multiple places, vertical format without borrowing
3. Subtraction of whole numbers, multiple places, horizontal format with borrowing
4. Subtraction of whole numbers, multiple places, vertical format with borrowing
5. Subtraction of whole numbers with two or more consecutive zeros in the minuend, (e.g., 6008 - 431)

C. Multiplication of Whole Numbers

1. Multiplication of two- and three-digit whole numbers
2. Multiplication with zero as a placeholder (e.g., 203 x 47)
3. Multiplication with zero as multiples of ten (e.g., 47 x 1000)

D. Divison of Whole Numbers

1. Division: one-digit divisor without remainder
2. Division: two-digit divisor without remainder
3. Division: one-digit divisor with remainder
4. Division: two-digit divisor with remainder

E. Addition and Subtraction of Fractions

1. Addition and subtraction of like fractions (with same denominators) in vertical format
2. Addition and subtraction of unlike fractions (without same denominators) in vertical format
3. Addition and subtraction of mixed fractions with like denominators in vertical format without regrouping

4. Addition and subtraction of mixed fractions with like denominators in vertical format with regrouping
5. Addition and subtraction of mixed fractions with unlike denominators in vertical format without regrouping
6. Addition and subtraction of mixed fractions with unlike denominators in vertical format with regrouping

F. Multiplication and Division of Fractions

1. Multiplication of a whole number by a proper fraction
2. Division of a whole number by a proper fraction
3. Multiplication of a whole number by a mixed number
4. Multiplication of a proper fraction by a proper fraction
5. Division of a proper fraction by a proper fraction

G. Addition and Subtraction of Decimals

1. Addition of decimals in vertical format
2. Addition of decimals in horizontal format
3. Subtraction of decimals in vertical format
4. Subtraction of decimals in horizontal format

H. Multiplication of Decimals

1. Multiplication of decimals
2. Multiplication with zero as a placeholder (e.g., 0.06 x 0.7)
3. Multiplication with zero as a multiplier of ten (e.g., 63.458 x 100)

I. Division of Decimals

1. Division of decimals with whole number divisor (e.g., $45\overline{)78.92}$)
2. Division of decimals: divisor with decimal
3. Division of decimals: answer less than 1 (e.g., $48.6\overline{)3.467}$)
4. Division of decimals: by 10, 100, 1000, etc.

J. Percent

1. Percent of a number (e.g., 25% of 16 = ?)
2. Percent one number is of another (e.g., 4 is what percent of 16 ?)
3. A number when a percent of it is known (e.g., 25% of what number is 4 ?)

II. NUMBER CONCEPTS

A. Comparison of Fractions

1. Two equivalent fractions: proper (e.g., $\frac{1}{2} = \frac{2}{4}$, $\frac{3}{9} = \frac{1}{3}$)
2. Two equivalent fractions: improper (e.g., $\frac{4}{2} = \frac{2}{1}$)
3. Relative size (comparing) of simple fractions (e.g., $\frac{1}{2}$ is more than $\frac{1}{3}$)

B. Changing Fractions, Decimals, and Percent to Equivalent Forms

1. Changing from a mixed number to an improper fraction or from an improper fraction to a mixed number (e.g., $2\frac{1}{4} = \frac{9}{4}$ or $\frac{11}{2} = 5\frac{1}{2}$)
2. Changing fractions to decimals
3. Changing decimals to fractions
4. Changing percent to a decimal
5. Changing a decimal to percent

C. Rounding Numbers

1. Rounding of decimals greater than one
2. Rounding of decimals less than one
3. Rounding of whole numbers

D. Properties of Numbers

1. Properties of numbers: odd, even
2. Concept of exponents (e.g., $10^2 = 10 \cdot 10$)
3. Properties of one and zero in addition and multiplication: (e.g., $2 \times 1 = 2$, $2 + 0 = 2$, $3 \times 0 = 0$)

III. MEASUREMENT

A. Customary Measure

1. Length
2. Area
3. Volume
4. Weight
5. Temperature

B. Metric Measure

1. Length
2. Area
3. Volume
4. Weight
5. Temperature

C. Area Measure

1. Rectangle with formula
2. Square with formula
3. Triangle with formula
4. Circle with formula

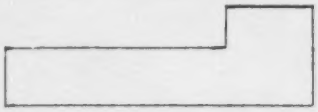
D. Other Measures

1. Time
2. Money
3. Quantity

IV. SIMPLE GEOMETRY

A. Geometric Concepts

1. Concept of perimeter (given an example of an irregular figure)



2. Concept of a right angle
3. Geometric relations: parallel lines
4. Geometric relations: perpendicular lines

B. Recognition of Parts of a Circle

1. Circles: identification of parts of a circle: center
2. Circles: identification of parts of a circle: radius
3. Circles: identification of parts of a circle: diameter
4. Circles: relationship between radius and diameter

V. PROBLEM SOLVING

A. Reading and Interpreting Data from Charts, Graphs, Tables, and Maps

1. Reading data from line graphs
2. Reading data from bar graphs
3. Reading data from circle graphs
4. Reading data from tables or charts
5. Interpretation of data from line graphs
6. Interpretation of data from bar graphs
7. Interpretation of data from circle graphs
8. Interpretation of data from tables or charts
9. Reading maps: location of places

B. Consumer Problems

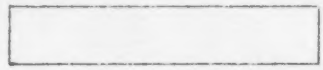
1. Simple interest
2. Sales tax
3. Discount

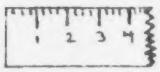
D. Applications Involving Basic Operations

1. Average (arithmetic mean) (e.g., bowling or test scores)
2. Ratio-proportion (e.g., If three bags of grass seed are required to seed an area of 4,000 square feet, how many bags will be required for a lawn of 32,000 square feet? (a) 8 (b) 11 (c) 12 (d) 24)
3. Simple application of basic operations of arithmetic (addition, subtraction, multiplication, and division) involving one operation
4. Simple application of basic operations of arithmetic (addition, subtraction, multiplication, and division) involving more than one operation

E. Estimation and Approximation

1. Reading maps: estimation of mileage
2. Estimation (e.g., the cost for a meal per person is $5.88 Which of the following is the best approximation of the cost for 23 people? (a) 6 x 20 (b) 5 x 20 (c) 5 x 30)
3. Approximation, e.g., approximate the length of the piece of wood:





MATHEMATICS SPECIFICATIONS

New Jersey 11th Grade Minimum Basic Skills

I. COMPUTATION

A. Addition of Whole Numbers

1. Addition of whole numbers, multiple places, horizontal format without carrying
2. Addition of whole numbers, multiple places, vertical format without carrying
3. Addition of whole numbers, multiple places, horizontal format with carrying
4. Addition of whole numbers, multiple places, vertical format with carrying

B. Subtraction of Whole Numbers

1. Subtraction of whole numbers, multiple places, horizontal format without borrowing
2. Subtraction of whole numbers, multiple places, vertical format without borrowing
3. Subtraction of whole numbers, multiple places, horizontal format with borrowing
4. Subtraction of whole numbers, multiple places, vertical format with borrowing
5. Subtraction of whole numbers with two or more consecutive zeros in the minuend (e.g., 6008 - 431)

C. Multiplication of Whole Numbers

1. Multiplication of two and three-digit whole numbers
2. Multiplication with zero as a placeholder (e.g., 203 x 47)
3. Multiplication with zero as multiples of ten (e.g., 47 x 1000)

D. Division of Whole Numbers

1. Division: one-digit divisor without remainder
2. Division: two-digit divisor without remainder
3. Division: one-digit divisor with remainder
4. Division: two-digit divisor with remainder

E. Addition and Subtraction of Fractions

1. Addition and subtraction of like fractions (with same denominators) in vertical format
2. Addition and subtraction of unlike fractions (without same denominator) in vertical format

3. Addition and subtraction of mixed fractions with like denominators in vertical format without regrouping
4. Addition and subtraction of mixed fractions with like denominators in vertical format with regrouping
5. Addition and subtraction of mixed fractions with unlike denominators in vertical format without regrouping
6. Addition and subtraction of mixed fractions with unlike denominators in vertical format with regrouping

F. Multiplication and Division of Fractions

1. Multiplication of a whole number by a proper fraction
2. Division of a whole number by a proper fraction
3. Multiplication of a whole number by a mixed number
4. Multiplication of a proper fraction by a proper fraction
5. Division of a proper fraction by a proper fraction

G. Addition and Subtraction of Decimals

1. Addition of decimals in vertical format
2. Addition of decimals in horizontal format
3. Subtraction of decimals in horizontal format

H. Multiplication of Decimals

1. Multiplication of decimals
2. Multiplication with zero as a placeholder (e.g., 0.06 x 0.7)
3. Multiplication with zero as multiples of ten (e.g., 63.458 x 100)

I. Division of Decimals

1. Division of decimals with whole number divisor (e.g., $45\overline{)78.92}$)
2. Division of decimals: divisor with decimal
3. Division of decimals: answer less than one (e.g., $48.6\overline{)3.467}$)
4. Division of decimals by 10, 100, 1000, etc.

J. Percent

1. Percent of a number (e.g., 25% of 16 = ?)
2. Percent one number is of another (e.g., 4 is what percent of 16?)
3. A number when a percent of it is known (e.g., 25% of what number is 4?)

II. NUMBER CONCEPTS

A. Comparison of Fractons

1. Two equivalent fractions: proper (e.g., $\frac{1}{2} = \frac{2}{4}$, $\frac{3}{9} = \frac{1}{3}$)

2. Two equivalent fractions: improper (e.g., $\frac{4}{2} = \frac{2}{1}$)

3. Relative size (comparing) of simple fractions (e.g., $\frac{1}{2}$ is more than $\frac{1}{3}$)

B. Changing Fractions, Decimals, and Percent to Equivalent Forms

1. Changing from a mixed number to an improper fraction or from an improper fraction to a mixed number

(e.g., $2\frac{1}{4} = \frac{9}{4}$ or $\frac{11}{2} = 5\frac{1}{2}$)

2. Changing fractions to decimals
3. Changing decimals to fractions
4. Changing percent to a decimal
5. Changing a decimal to percent

C. Rounding of Numbers

1. Rounding of decimals greater than one
2. Rounding of decimals less than one
3. Rounding of whole numbers

D. Properties of Numbers

1. Properties of numbers: odd and even
2. Properties of one and zero in addition and multiplication (e.g., 2 x 1 = 2, 2 + 0 = 2, 3 x 0 = 0)

III. MEASUREMENT

A. Customary Measure

1. Length
2. Area
3. Volume
4. Weight
5. Temperature

B. Metric Measure

1. Length
2. Area
3. Volume
4. Weight

C. Area Measure

1. Rectangle with formula
2. Square with formula
3. Triangle with formula
4. Circle with formula

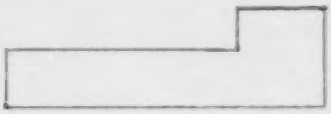
D. Other Measures

1. Time
2. Money
3. Quantity

IV. SIMPLE GEOMETRY

A. Geometric Concepts

1. Concept of perimeter (given an example of an irregular figure)



2. Concept of a right angle
3. Geometric relations: parallel lines
4. Geometric relations: perpendicular lines

B. Recognition of Parts of a Circle

1. Circles: identification of parts of a circle: center
2. Circles: identification of parts of a circle: radius
3. Circles: identification of parts of a circle: diameter
4. Circles: relationship between radius and diameter

V. PROBLEM SOLVING

A. Reading Data From Charts, Graphs, Tables and Maps

1. Reading data from line graphs
2. Reading data from bar graphs
3. Reading data from circle graphs
4. Reading data from tables or charts
5. Reading maps: location of places

B. Interpreting Data From Charts, Graphs, Tables and Maps

1. Interpretation of data from line graphs
2. Interpretation of data from bar graphs
3. Interpretation of data from circle graphs
4. Interpretation of data from tables or charts

C. Consumer Problems

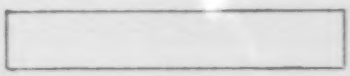
1. Simple interest
2. Sales tax
3. Discount
4. Credit charges
5. Checking accounts: writing checks
6. Checking accounts: completing the check stub

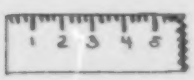
C. Applications Involving Basic Operations

1. Average (arithmetic mean) (e.g., bowling or test scores)
2. Ratio-proportion (e.g., If three bags of grass seed are required to seed an area of 4,000 square feet, how many bags will be required for a lawn of 32,000 square feet? (a) 8 (b) 11 (c) 12 (d) 24)
3. Simple application of basic operations or arithmetic (addition, subtraction, multiplication and division) involving one operation
4. Simple application of basic operations of arithmetic (addition subtraction, multiplication and division) involving more than one operation

D. Estimation and Approximation

1. Reading maps: estimation of mileage
2. Estimation (e.g., The cost for a meal per person is $5.88 Which of the following is the best approximation of the cost for 23 people? (a) 6 x 20 (b) 5 x 20 (c) 5 x 30)
3. Approximation (e.g, Approximate the length of the piece of wood)





A P P E N D I X B

PROCEDURES EMPLOYED IN DETERMINATION OF MINIMUM BASIC SKILLS CUT-OFF SCORES

This material lists procedures and conclusions reached by both the subject matter and Technical Advisory Committees in determining Minimum Basic Skills Cut-off Scores.

SUBJECT MATTER COMMITTEES

The subject matter committes followed a modification of a procedure suggested by L. Nedelsky in "Absolute Grading Standards for Objective Tests" (Educational and Psychological Measurement, 1954, Vol. 14, No. 1).

Basically this procedure asks each Committee member to estimate the number of distractors in each test item that even a minimally competent student would be able to eliminate as wrong answers.

The following is a copy of the actual instructions given to committee members on this procedure by E.T.S. specialists:

1) The first step in applying the standard setting procedure is to think about what you consider to be the lowest level of performance you are still willing to classify as mastery of the skills measured by the test that you worked on. If you have recent classroom experience, it may help you to think about students you have known that were just barely good enough to be considered masters of the basic skills measured by the test.

We expect that there will be some differences of opinion as to what is meant by minimally acceptable performance.

2) The second step is to look at the first question in the test and decide <u>how many wrong answers are so wrong that even the minimally acceptable student would know that they are wrong.</u>

For example, the following question is similar to one on the Grade Three Math test:

> The school lunchroom served 506 people on Monday and 315 people on Tuesday. How many people were served on the two days?
>
> (A) 191
> (B) 201
> (C) 811
> (D) 821

You may decide that even the minimally competent student should know that A and B are wrong because the total for two days would be greater than the number on any single day. But you may decide that wrong answer C involves an error that the minimally competent student would not know is wrong. You would therefore decide that two wrong answers for the question are so wrong that even the minimally competent student would know that they are wrong.

3) We will then ask for a few volunteers to tell the group which wrong answers were selected and and their reasons for selecting them. You will be encouraged to discuss the choices. The discussions may either confirm your ealier opinions or change your mind.

4) The last step is for you to record the number of wrong answers you selected as being so wrong that even the minimally qualified student would know they are wrong.

5) We will go on to the next question and repeat the process. After you are done, we will estimate the tentative standard for each test based on the data you provided.

After all judgements are collected, the number of distracters to be eliminated will be translated into an estimate of the probability that a minimally competent student might answer the item correctly.

For example, if a committee member decided that two distracters for an item were so clearly wrong that even a minimally competent student would know that they were wrong, two choices would remain. The minimally competent student would then have to guess which of the two remaining choices was correct. The probability of guessing correctly is .50.

If a Committee member decided that no distracters were so obviously wrong that a minimally competent student could eliminate them, four choices would remain. The minimally competent student would then have to guess which of the four remaining choices was correct. The probability of guessing correctly is .25.

For each committee member, the probabilities are then summed across the items in the test resulting in an estimate of the expected score of a minimally competent student. For each test, the estimated expected scores are averaged across all committee members, resulting in a pooled estimate of the expected average score of a group of minimally competent students.

The estimated average score of a group of minimally competent students serves as a standard since it is the point on the score scale that is likely to discriminate between competent and incompetent students.

RESULTS OF USING THE NEDELSKY APPROACH

For each test, the following table shows the tentative standard as a raw score and as a percentage of the items in the test. Also shown are the number of committee members, the number of items in the test, the minimum and maximum estimated standards and the standard deviation of the estimates.

The minimum and maximum estimated standards and the standard deviation of the estimates are shown in Table I to indicate the level of agreement among the committee members.

TABLE I

Test Development Committee
Estimates of Cut-Off Scores

Test	Average Raw Score Standard	N Items	Percentage Standard	N Committee Members	Minimum Estimate	Maximum Estimate	Standard Deviation of Estimat
Reading 3	63.6	100	63.6	10	53.8	74.2	8.05
Reading 6	49.9	95	52.5	10	36.9	58.1	7.18
Reading 9	79.8	110	72.5	9	70.1	85.6	6.86
Reading 11	90.1	110	81.9	8	80.7	95.7	5.66
Math 3	58.2	100	58.2	10	46.7	66.6	6.55
Math 6	65.9	100	65.9	10	56.9	74.1	6.09
Math 9	35.3	95	37.2	7	30.0	38.8	3.05
Math 11	33.6	90	37.3	7	28.7	36.3	2.61

With the exception of the estimates of the ninth and eleventh grade mathematics tests, the recommended cut-off scores for the other tests were relatively consistent, ranging from 52.5%-81.9% for reading and 58.2%-65.9% for mathematics.

The estimates for the ninth and eleventh grade mathematics tests were 37.2% and 37.3%, respectively. The secondary mathematics committee, responsible for these tests, felt that their estimates were an appropriate representation of the Nedelsky procedure. However, they also were of the opinion that these estimates were not realistic for use. Hence, the committee used another procedure to make recommendations.

For each test, the committee looked at each cluster, (i.e., items measuring the same general concept) and estimated the number of items in that cluster that a minimally proficient student would correctly answer. Summing the estimates for each test, the committee estimated that a minimally proficient student should correctly answer 65% of the items. Therefore, their recommendation was 65% for both the ninth and eleventh grade tests.

TECHNICAL ADVISORY COMMITTEE (TAC)

The Technical Advisory Committee reviewed the results of the 1976 administration of the Educational Assessment Program, the results of the October 1977 field test administration of the Minimum Basic Skills, and the results of the Subject Matter Committees cut-off score estimation procedures.

In discussion, the TAC recommended that no cut-off scores should be below 65% correct since the instruments were constructed using criterion referenced principles. They also recommended that no cut-off scores should be above 80% correct.

Based on the accumulated data, the TAC recommended that the mathematics cut-off score be 65% and the reading cut-off score be 75%. The higher reading score was recommended because:

1) reading proficiency is a necessary antecedent to mathematics proficiency, and

2) based on the results of the field test administration, it was determined that the mathematics tests were of greater difficulty then the reading tests.

A P P E N D I X C

NEW JERSEY DEPARTMENT OF EDUCATION
MINIMUM BASIC SKILLS REPORT

DISTRICT | DIST CODE | SCHOOL | SCHOOL CODE | TEST DATE | PAGE 1

PUPIL | DATE OF BIRTH | SEX

READING SCORE INDICES

TOTAL	VOCABULARY	PHONETIC ANALYSIS	STRUCTURAL ANALYSIS	WORD RECOGNITION AND APPLICATION	LITERAL COMPREHENSION	INTERPRETATION	STUDY SKILLS
7	7	7	7	7	7	7	6
7	7	7	7	7	7	6	6
7	7	7	7	7	7	7	6
7	7	7	7	6	7	7	7
7	7	7	6	7	7	6	7
7	7	6	7	7	6	7	7
6	7	6	5	6	6	6	6
6	7	6	6	6	6	7	7
6	6	4	6	6	6	7	6
6	7	5	7	7	7	6	7
6	7	6	5	7	6	7	6
6	7	6	6	6	6	5	6
6	6	6	7	7	7	7	6
6	6	6	5	7	5	6	6
6	7	6	7	7	6	7	7
6	7	5	6	6	6	6	6
6	7	6	6	7	4	3	4
6	7	5	6	7	6	7	6
6	7	6	7	6	4	7	4
6	7	6	6	7	6	6	6
5	7	4	7	6	5	4	4
5	6	4	4	5	6	4	5
5	7	5	6	7	4	5	6
5	7	5	4	6	5	4	4
5	7	5	3	5	4	5	4
5	7	4	5	6	6	7	5
5	7	5	5	4	4	5	4
5	7	4	6	7	4	5	6
5	7	4	6	6	4	5	2
5	7	5	6	6	3	3	6
5	6	4	5	6	4	3	4
5	7	6	6	6	4	2	4
4	7	4	3	5	1	1	4
4	7	4	4	4	2	3	6
4	7	4	5	5	3	5	2
4	7	4	4	5	4	4	4
4	6	4	3	4	4	4	2
3	6	3	3	5	4	2	3

LEVEL 3

SCORE INDEX	PERCENT CORRECT
7	95-100
6	85-94
5	75-84
4	60-74
3	40-59
2	20-39
1	0-19

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4. Nedelsky, L., "Absolute Grading Standards for Objective Tests," Educational and Psychological Measurement, 1954, 14, No. 1.

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6. Zieky, Michael, Personal Correspondance to Minimum Basic Skills Subject Matter Committees, 1977.

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